REMARKS

This paper is being provided in response to the Office Action dated November 17, 2006, for the above-referenced application. In this response, Applicant has cancelled withdrawn claims 28-31 and 35 without prejudice or disclaimer of the subject matter thereof and amended claims 1, 15, 21 and 32 to clarify that which Applicant considers to be the claimed invention. Applicant respectfully submits that the amendments to the claims are fully supported by the originally-filed specification.

The rejection of claims 15-20 under 35 U.S.C. 101 as being non-statutory subject matter has been addressed by amendments contained herein. Claim 15 as been amended to recite computer software stored on a computer-readable medium. Accordingly, Applicants respectfully submit that the claims recite statutory subject matter and that the rejection should be reconsidered and withdrawn. (See MPEP 2106(IV)(B)(1)).

The rejection of claims 1 and 15 under 35 U.S.C. 112, second paragraph, as being incomplete is respectfully traversed. The Office Action indicates that the claims are "incomplete" for failing to include "structural" cooperative relationships of elements. However, Applicants point out that claim 1 is a method claim and claim 15 is a claim directed to software stored in a computer readable medium that recites executable code for performing recited functions. Although the Office Action seems to indicate that a "structural" link is required between the features identified in the Office Action as "1" and "2", such a "structural" link is not required for a method claim, such as that recited by claim 1, or the software implementation stored on a computer readable medium, such as that recited by claim 15. MPEP 2172.01 makes

this point clear by stating the following:

> *Ex parte Huber,* 148 USPQ 447, 448-49 (Bd. Pat. App. 1965) (A claim does not necessarily fail to comply with 35 U.S.C. 112, second paragraph where the various elements do not function simultaneously, are not directly functionally related, do not directly intercooperate, and/or serve independent purposes.).

Applicants recite a method, and software implementation stored on a computer-readable medium, of handling writing new data that includes at least three recited functional steps. Accordingly, in view of the above, the requirement in the Office Action that the features "1" and "2" must be linked "structurally" and that, absent this, the claims 1 and 15 are rendered "incomplete," is inaccurate and refuted by the explicit language of the MPEP. Accordingly, Applicants submit that the claims are definite and complete and that the rejection of the claims should be reconsidered and withdrawn.

The rejection of claims 1-2, 9-11, 14-17, 20-21, 26, 32 and 34 under 35 U.S.C. 102(e) as being anticipated by U.S. Patent No. 7,047,355 to Nakatani, et al. (hereinafter "Nakatani") is hereby traversed and reconsideration is respectfully requested.

Independent claim 1, as amended herein, recites a method of handling writing new data. The method includes creating a journal entry that points to a first storage location containing old data to be replaced by the data new data. The journal entry is maintained after writing the new data. New storage space is allocated having a second storage location. The new data is written to the new storage space at the second storage location. The old data is maintained in the first storage location after writing the new data to the new storage space at the second storage location. Claims 2-14 depend directly or indirectly from independent claim 1.

Independent claim 15, as amended herein, recites computer software, stored on a computer-readable medium, that handles writing new data. The software includes executable code that creates a journal entry that points to a first storage location containing old data to be replaced by the new data. The journal entry is maintained after writing the new data. Executable code allocates new storage space having a second storage location. Executable code writes the new data to the new storage space at the second storage location. The old data is maintained in the first storage location after writing the new data to the new storage space at the second storage location. Claims 16-20 depend directly or indirectly from independent claim 15.

Independent claim 21, as amended herein, recites a method of restoring data to a storage device. The method includes accessing a journal having a plurality of entries. Each of the entries points to prior data that existed on the storage device before a write caused the entry to be created. There is an entry in the journal for each data write to the storage device that occurred after an initial time. The prior data corresponding to each of the plurality of entries in the journal is maintained in the storage device after each new data write after the initial time. Each of the entries is used to remap the storage device to point to the prior data. Claims 22-27 depend directly or indirectly from independent claim 21.

Independent claim 32, as amended herein, recites a journal used for continuous backup of a storage device. The journal includes a first entry that points to a first storage location containing old data replaced by new data written to the storage device. A plurality of additional entries point to respective additional storage locations containing old data replaced by new data written to the storage device. For every write to the storage device that occurs after an initial

time, there is a corresponding entry. The old data corresponding to the first entry and each of the plurality of additional entries is maintained in the storage device after each new write to the storage device after the initial time. Claims 33 and 34 depend directly from independent claim 32.

The Nakatani reference discloses an updated data write method using a journal log. Nakatani discloses that a server, including a buffer memory, and a storage system write journal logs and execute flush processing. Nakatani discloses that a journal log is provided to separately store a file update history in the storage system because the contents of data updating executed in the buffer memory of the server may be lost because of a failure before data is updated in the storage area in the storage system. (See col. 7, lines 39-45 of Nakatani.) The Office Action cites to col. 6, lines 4-27 of Nakatani in which is disclosed the use of pointers to manage the status of a journal log storing area after flush processing.

Applicants recite a system for managing data writes that include a journal that keeps track of all of the old data storage areas corresponding to each write of new data to a storage device. Applicants refer to FIGS. 5, 6 and 7 of the originally-filed specification in which is shown a series of new writes to a storage device and the corresponding use of journal entries to keep track of the *locations of old data* in the storage device. Accordingly, Applicants' claimed invention provides a method and device for continuous data backup in which a storage device can easily be restored to an earlier state through the use of the journal entries and stored old data that is maintained in the storage device. (See, for example, page 14, line 8 to page 15, line 4 of the originally-filed specification.)

In contrast, Nakatani discloses a journal log for new data written to a buffer memory of a storage device before being written to a storage system. Nakatani states: "The journal log is provided to separately store a file update history in the storage system 2 because the contents of data updating executed in the buffer memory 13 of the server 1 may be lost because of a failure before data is updated in the storage area in the storage system 2. Therefore, the journal log is not necessary once data is updated in the storage area of the storage system 2." (See col. 7, lines 39-45 of Nakatani.) Nakatani discloses a journal log system in which *new updated data* that is to be written to a storage system is first stored in a buffer memory in storage locations that are logged into a journal. That is, the journal log disclosed by Nakatani is for ensuring the correct writing of new data to a storage device in the event of a failure *before the new data is updated in the storage area*. Nakatani then goes on to disclose a flush processing system in which data from the journal log may be flushed when it is no longer needed. Applicants submit that Nakatani does not disclose a system, as claimed by Applicants, that allows for restoring of a storage device to an earlier state by using journal entries to maintain pointers to *storage locations of old data* that is to be replaced by the writing of new data and in which the old data is maintained in the storage device.

Accordingly, Applicants respectfully submit that Nakatani does not teach or fairly suggest at least the above-noted features as claimed by Applicants. In view of the above, Applicants respectfully request that the rejection be reconsidered and withdrawn.

The rejection of claims 3-8, 12-13, 18-19, 22-25, 27 and 33 under 35 U.S.C. 103(a) as

being unpatentable over Nakatani in view of U.S. Patent No. 7,013,379 to Testardi (hereinafter "Testardi") is hereby traversed and reconsideration is respectfully requested. It is noted that some of the rejections set forth in the Office Action appear to cite to a "Sakuraba" reference. It is believed that, where cited in the Office Action, "Sakuraba" is meant to refer to the Nakatani reference.
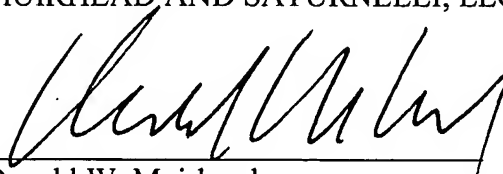
The features of independent claims 1, 15, 21 and 32 are discussed above with respect to Nakatani. Claims 3-8, 12-13, 18-19, 22-25, 27 and 33 depend therefrom.

The Testardi reference discloses techniques in a computer system for handling data operations to storage devices. The Office Action cites to Testardi as disclosing the use of a switch that handles data operations to a storage device.

Applicants respectfully submit that Testardi does not overcome the above-noted deficiencies of the Nakatani reference with respect to Applicants' claimed invention. Accordingly, Applicants submit that neither Nakatani nor Testardi, taken alone or in any combination, teach or fairly suggest at least the above-noted features as claimed by Applicants. In view of the above, Applicants respectfully request that the rejection be reconsidered and withdrawn.

Based on the above, applicant respectfully requests that the Examiner reconsider and withdraw all outstanding rejections and objections. Favorable consideration and allowance are earnestly solicited. Should there be any questions after reviewing this paper, the Examiner is invited to contact the undersigned at 508-898-8603.

Respectfully submitted,
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